

**REMARKS**

Claims 1-21 are pending and under current examination.

In the Office Action,<sup>1</sup> the Examiner :

- (a) objected to the drawings under 37 C.F.R. § 1.121(d);
- (b) rejected claims 18-20 under 35 U.S.C. § 112, second paragraph, as being incomplete for omitting essential structural cooperative relationships of elements;
- (c) rejected claims 1-3, 6-12, and 15-20 under 35 U.S.C. § 102(e) as being anticipated by Choi et al. (U.S. Patent Publication No. 2003/0202568) ("Choi"); and
- (d) rejected claims 4, 5, 13, and 14 under 35 U.S.C. § 103(a) as being unpatentable over Choi, in view of Zeira (U.S. Patent Publication No. 2004/0223538) ("Zeira").

Applicants have amended claims 1, 4-11, and 13-20 to improve form, translation, and readability. Applicants respectfully traverse the rejections for the following reasons.

**Objection of the drawings under 37 C.F.R. § 1.121(d):**

The Examiner objected to the drawings under 37 C.F.R. § 1.121(d). In particular, the Examiner alleged that "in Fig. 5 number 14 should be connected to the correct block in the drawing." (Office Action, p. 2).

In response, Applicants have submitted a replacement drawing sheet including Fig. 5. Specifically, the lead line of number 14 in Fig. 5 is extended to connect to the corresponding block in the replacement drawing. Thus, Applicants deem the objection overcome.

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<sup>1</sup> The Office Action may contain statements characterizing the related art, case law, and claims. Regardless of whether any such statements are specifically identified herein, Applicants decline to automatically subscribe to any statements in the Office Action.

Applicants request that the attached replacement drawing sheet Fig. 5 be made of official record in the above-identified patent application. If the drawing for any reason is not in full compliance with the pertinent statutes and regulations, please so advise the undersigned.

**Rejection of Claims 18-20 under 35 U.S.C. § 112, 2nd paragraph:**

The Examiner rejected claims 18-20 under 35 U.S.C. § 112, 2nd paragraph, as being incomplete for omitting essential structural cooperative relationships of elements, such omission allegedly amounting to a gap between the necessary structural connections. In particular, the Examiner alleged that “[r]egarding to claim 18, the omitted structural cooperative relationships are: a tracking device vs. an approximating device and a signal-separating device.” (Office Action, p. 3).

Applicants respectfully traverse this rejection and assert that original claim 18 provides sufficient structural relationships to meet the requirements of 35 U.S.C. § 112, 2nd paragraph. However, to expedite prosecution, Applicants have amended claim 18 to even more explicitly recite relationships between a “tracking device”, an “approximating device”, and a “signal-separating device”. Applicants therefore request withdrawal of the rejection of claim 18 under 35 U.S.C. § 112, 2nd paragraph, and claims 19-20 dependent from base claim 18.

**Rejection of Claims 1-3, 6-12, and 15-20 under 35 U.S.C. § 102(e):**

Applicants traverse the rejection of claims 1-3, 6-12, and 15-20 under 35 U.S.C. § 102(e) as being anticipated by Choi. Applicants respectfully disagree with the Examiner’s arguments and conclusions.

In order to properly establish anticipation under 35 U.S.C. § 102, the Federal Circuit has held that “[a] claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference.” *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). Furthermore, “[t]he identical invention must be shown in as complete detail as is contained in the ... claim.” *Richardson v. Suzuki Motor Co.*, 868 F.2d 1126, 1236, 9 U.S.P.Q.2d 1913, 1920 (Fed. Cir. 1989). See also M.P.E.P. § 2131.

Choi does not disclose each and every element recited in the claims, despite the Examiner’s allegations. Particularly, Choi does not disclose at least Applicants’ claimed “obtaining an approximation of the pulse shaping distortion” as recited in claim 1.

The Examiner alleged that Choi teaches “obtaining an approximate function of pulse shaping in the first signal ([0021])” (Office Action, p. 2). However, this is not correct. Choi teaches in par. [0021] that “[t]he IF signals are converted into baseband signals through a root pulse shaping filter (not illustrated) identical with that used by each mobile station for transmission, and they are stored in a buffer (not illustrated).” Choi further discloses in par. [0021] that “the interference canceller receives the baseband signals stored in the buffer, and cancels the interference.” However, neither the above quoted portion of Choi, nor any other portion, constitutes “obtaining an approximation of the pulse shaping distortion” as recited in claim 1.

With respect to claim 9, claim 9 recites “[a] signal processing method comprising . . . obtaining an approximation of the non-channel function.” The Examiner alleged that Choi teaches “obtaining an approximate of a non-channel function in the

first signal ([0021])” (Office Action, p. 4). However, this is not correct. Similar to the discussion above in connection with claim 1, neither paragraph [0021], nor any other portion of Choi, teaches “obtaining an approximation of the non-channel function” as recited in claim 9. Choi therefore fails to teach or suggest each and every element recited in claim 9.

Choi also fails to teach or suggest each and every element recited in claim 18. Claim 18 recites “[a] signal processing system, comprising . . . an approximating device for providing an approximation of a non-channel function in the first signal, based on the amplitude estimate and symbol delay obtained from the tracking device.” The Examiner alleged that Choi teaches “an approximating device for providing an approximate of a non-channel function in the first signal ([0021])” (Office Action, p. 5). However, this is not correct. Similar to the discussion above in connection with claims 1 and 9, neither paragraph [0021], nor any other portion of Choi, teaches “an approximating device for providing an approximation of a non-channel function in the first signal” as recited in claim 18.

For at least this reason, Choi does not anticipate independent claims 1, 9, and 18. Independent claims 1, 9, and 18 are allowable, and dependent claims 2-3, 6-8, 10-12, 15-17, and 19-20 are also allowable at least by virtue of their dependence from one of allowable base claims 1, 9, and 18. The 35 U.S.C. § 102(e) rejection is therefore improper and should be withdrawn.

**Rejection of Claims 4, 5, 13 and 14 under 35 U.S.C. § 103(a):**

Applicants traverse the rejection of claims 4, 5, 13, and 14 under 35 U.S.C. § 103(a) as being unpatentable over Choi, in view of Zeira. A *prima facie* case of

obviousness has not been established. As M.P.E.P. § 2142 states, “[t]he examiner bears the initial burden of factually supporting any *prima facie* conclusion of obviousness.”

To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on applicant’s disclosure. *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991). M.P.E.P. § 2142, 8th Ed., Rev. 5 (August 2006), p. 2100-125, 126.

Each of these requirements must “be found in the prior art, and not be based on applicant’s disclosure.” M.P.E.P. § 2143.

Claims 4 and 5 depend upon base claim 1, and claims 13 and 14 depend upon base claim 9. As explained above, Choi teaches neither “obtaining an approximation of the pulse shaping distortion” as recited in claim 1 and required by dependent claims 4 and 5, nor “obtaining an approximation of the non-channel function” as recited in claim 9 and required by dependent claims 13 and 14.

Zeira fails to cure Choi’s deficiencies. The Examiner alleged that Zeira “disclose[s] [an] equalizer/decision feedback equalizer (34 in Fig. 3) in a successive interference cancellation receiver.” (Office Action, p.6). However, even if this allegation is correct, which Applicants do not concede, Zeira teaches neither “obtaining an approximation of the pulse shaping distortion” as recited in claim 1 and required by

dependent claims 4 and 5, nor “obtaining an approximation of the non-channel function” as recited in claim 9 and required by dependent claims 13 and 14.

For at least the foregoing reasons, neither Choi nor Zeira, nor any combination thereof, teaches or suggests each and every feature of claims 4, 5, 13, and 14. For at least this reason, no *prima facie* case of obviousness has been established.

Accordingly, the § 103(a) rejection of those claims should be withdrawn.

**New claim 21:**

New dependent claim 21 recites, *inter alia*, “an approximation of the non-channel function comprises an approximation of the non-channel distortion”. As discussed above, claim 9 should be allowed. New claim 21 should be allowed at least because of its dependence upon independent claim 9. Applicants therefore request timely allowance of new claims 21.

**Conclusion:**

In view of the foregoing, Applicants request reconsideration of the application and withdrawal of the rejection. Pending claims 1-21 are in condition for allowance, and Applicant requests a favorable action.

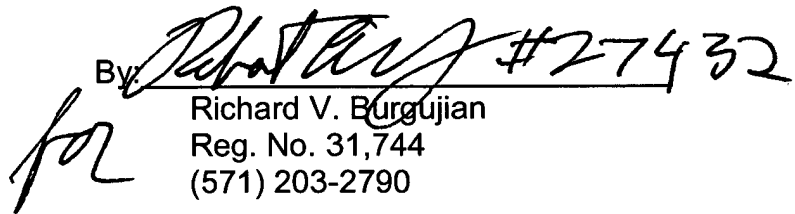
If there are any remaining issues or misunderstandings, Applicants request the Examiner telephone the undersigned representative to discuss them.

Please grant any extensions of time required to enter this response and charge any additional required fees to our deposit account 06-0916.

Respectfully submitted,

FINNEGAN, HENDERSON, FARABOW,  
GARRETT & DUNNER, L.L.P.

Dated: February 13, 2007

By  #27432  
for Richard V. Burgujian  
Reg. No. 31,744  
(571) 203-2790

Attachment: One (1) replacement drawing sheet Fig. 5.

**AMENDMENTS TO THE DRAWINGS:**

Applicants submit the attached replacement drawing sheet to amend Fig. 5 as discussed below.

Fig. 5: The lead line of number 14 in Fig. 5 is extended to connect to the corresponding block in the replacement drawing.

Attachment: One (1) replacement drawing sheet Fig. 5.